

Experiment Number: 20712 - 03

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH
AVERAGE SEVERITY GRADES[b]**

Date Report Requested: 09/18/2020

Test Type: Chronic PN

Tris(Chloropropyl)phosphate

Time Report Requested: 11:04:53

Route: DOSED FEED

CAS Number: 13674-84-5

First Dose M/F: 12/12/11 / 12/13/11

Species/Strain: RATS/HSD

Lab: BAT

Final 3_Rats

NTP Study Number: C20712
Lock Date: 04/09/2018
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 3.0.2.3_002
PWG Approval Date: NONE

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Harlan Sprague Dawley RATS MALE	0 ppm males	2500 ppm males	5000 ppm males	10000 ppm males	20000 ppm males
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Disposition Summary

Animals Initially In Study	50	50	50	50	50
Early Deaths					
Moribund Sacrifice	15	8	8	5	8
Natural Death	10	8	8	8	11
Survivors					
Terminal Sacrifice	25	34	34	37	31
Animals Examined Microscopically	50	50	50	50	50

ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(50)	(50)	(50)
Intestine Large, Cecum	(49)	(50)	(50)	(48)	(49)
Erosion	1 [3.0]		1 [3.0]		
Infiltration Cellular, Lymphocyte					1 [2.0]
Inflammation, Suppurative	1 [2.0]				
Inflammation, Acute		1 [2.0]	1 [1.0]		
Inflammation, Chronic Active	1 [1.0]				
Mineral	1 [4.0]	2 [2.0]			
Polyarteritis Nodosa		2 [2.5]		1 [2.0]	
Lymphoid Tissue, Hyperplasia		1 [2.0]			
Intestine Large, Colon	(49)	(50)	(50)	(48)	(50)
Diverticulum			1		
Parasite Metazoan	3	1	1	2	1
Lymphoid Tissue, Hyperplasia	2 [2.5]	1 [3.0]	1 [3.0]	1 [2.0]	
Intestine Large, Rectum	(50)	(50)	(50)	(50)	(50)
Parasite Metazoan	7	5	6	7	2
Polyarteritis Nodosa					1 [3.0]
Intestine Small, Duodenum	(50)	(49)	(50)	(49)	(50)
Polyarteritis Nodosa	1 [3.0]				1 [3.0]
Intestine Small, Ileum	(49)	(50)	(50)	(48)	(49)
Intestine Small, Jejunum	(48)	(49)	(49)	(48)	(50)
Hyperplasia	2 [2.5]				
Liver	(50)	(50)	(50)	(50)	(49)
Angiectasis					1 [2.0]

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Basophilic Focus	1	1	2	9	11
Clear Cell Focus	26	31	33	36	35
Degeneration, Cystic		1 [1.0]		1 [1.0]	2 [1.0]
Eosinophilic Focus	3	5	3	5	13
Fatty Change	2 [1.5]		1 [1.0]	1 [1.0]	
Hepatodiaphragmatic Nodule			1	2	1
Inclusion Body Intracytoplasmic					1 [1.0]
Inflammation, Focal				1 [1.0]	
Mixed Cell Focus	1	2	4	1	8
Necrosis	3 [1.7]	4 [1.8]	5 [2.4]		1 [2.0]
Pigment				1 [1.0]	22 [1.1]
Polyarteritis Nodosa		1 [3.0]			
Regeneration					1 [2.0]
Thrombus					1
Bile Duct, Cyst	3		3	6	6
Bile Duct, Dilation	1 [3.0]	1 [4.0]	1 [2.0]		1 [4.0]
Bile Duct, Hyperplasia	12 [1.2]	23 [1.0]	17 [1.0]	19 [1.0]	29 [1.0]
Hepatocyte, Cytoplasmic Alteration			1 [1.0]	1 [3.0]	2 [2.5]
Hepatocyte, Pigment				2 [1.0]	
Oval Cell, Hyperplasia			1 [2.0]		
Mesentery	(4)	(0)	(3)	(0)	(1)
Hemorrhage	1 [3.0]				
Polyarteritis Nodosa	1 [3.0]		1 [3.0]		
Fat, Necrosis	1 [1.0]		1 [1.0]		
Pancreas	(50)	(50)	(50)	(50)	(50)
Cyst			1		
Inflammation, Chronic Active		1 [2.0]			
Polyarteritis Nodosa	5 [1.8]	4 [2.3]	1 [3.0]		
Acinus, Atrophy	5 [1.4]	2 [1.5]	3 [1.7]	3 [1.0]	
Acinus, Cytoplasmic Alteration					1 [3.0]
Acinus, Hyperplasia	8 [3.4]	12 [3.0]	8 [3.3]	11 [2.6]	12 [2.6]
Acinus, Inflammation, Chronic Active			1 [4.0]		
Duct, Degeneration					1 [2.0]
Salivary Glands	(50)	(50)	(50)	(50)	(49)
Inflammation, Suppurative			1 [4.0]		1 [4.0]
Stomach, Forestomach	(50)	(50)	(50)	(50)	(50)

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Dysplasia			1 [3.0]		
Erosion		1 [1.0]			
Inflammation, Granulomatous		1 [2.0]			
Inflammation, Acute	1 [1.0]		2 [1.5]		
Inflammation, Chronic	1 [2.0]				
Inflammation, Chronic Active	4 [2.0]	3 [1.3]	3 [1.7]	2 [2.5]	2 [2.5]
Necrosis					1 [1.0]
Ulcer	3 [1.7]		1 [2.0]	1 [2.0]	1 [2.0]
Epithelium, Hyperplasia	6 [2.3]	2 [2.0]	5 [2.0]	2 [2.5]	2 [1.5]
Stomach, Glandular	(50)	(50)	(50)	(50)	(50)
Erosion	1 [2.0]				
Inflammation, Suppurative	1 [1.0]				
Inflammation, Acute			1 [1.0]		
Inflammation, Chronic Active	1 [1.0]			1 [1.0]	1 [1.0]
Mineral	7 [2.7]	5 [2.2]	3 [1.7]	2 [1.5]	5 [1.0]
Polyarteritis Nodosa		1 [3.0]			

CARDIOVASCULAR SYSTEM

Blood Vessel	(50)	(50)	(50)	(50)	(50)
Aneurysm			1 [2.0]		
Degeneration	1 [1.0]				
Degeneration, Hyaline	2 [2.0]				
Inflammation, Chronic Active	1 [1.0]		2 [1.0]	2 [1.5]	
Mineral	6 [2.3]	8 [1.6]	5 [1.4]	2 [1.0]	2 [1.0]
Necrosis, Fibrinoid	1 [1.0]				
Carotid Artery, Polyarteritis Nodosa	1 [3.0]				
Heart	(50)	(50)	(50)	(50)	(50)
Cardiomyopathy	30 [1.5]	30 [1.2]	27 [1.6]	26 [1.3]	27 [1.1]
Inflammation, Acute	1 [1.0]				
Inflammation, Chronic Active				1 [1.0]	
Mineral	3 [2.3]	3 [1.0]	2 [1.5]		
Polyarteritis Nodosa		2 [2.0]	1 [3.0]	2 [2.5]	
Atrium, Thrombus				1	
Endocardium, Hyperplasia		1 [2.0]			2 [1.5]

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Pericardium, Hyperplasia					1 [3.0]
Valve, Fibrosis				1 [1.0]	1 [2.0]
Ventricle, Dilatation					1 [2.0]
ENDOCRINE SYSTEM					
Adrenal Cortex	(50)	(50)	(50)	(50)	(50)
Angiectasis		1 [2.0]			
Atrophy			1 [3.0]		
Degeneration, Cystic	4 [1.0]	7 [1.0]	4 [1.0]	5 [1.0]	3 [1.0]
Hyperplasia, Focal	5 [1.2]	12 [1.5]	11 [1.6]	8 [1.3]	8 [1.3]
Hypertrophy, Focal	15 [1.1]	14 [1.2]	19 [1.2]	11 [1.0]	13 [1.1]
Metaplasia, Osseous				1 [2.0]	
Necrosis	1 [4.0]	1 [2.0]	1 [2.0]		1 [1.0]
Thrombus			1	1	
Adrenal Medulla	(50)	(50)	(50)	(50)	(50)
Hyperplasia, Focal	15 [1.7]	25 [1.6]	19 [1.5]	14 [1.5]	7 [1.6]
Necrosis	1 [3.0]				
Islets, Pancreatic	(50)	(50)	(50)	(50)	(50)
Hyperplasia	1 [2.0]	5 [1.8]	3 [1.3]	3 [2.0]	2 [1.5]
Parathyroid Gland	(49)	(46)	(46)	(44)	(45)
Hyperplasia	5 [2.8]	4 [3.0]	2 [2.0]	5 [1.4]	1 [1.0]
Infiltration Cellular, Lymphocyte	1 [2.0]				
Pituitary Gland	(50)	(50)	(50)	(50)	(49)
Pars Distalis, Hyperplasia	18 [2.1]	17 [2.0]	22 [1.9]	18 [2.0]	12 [2.0]
Rathke's Cleft, Hyperplasia	1 [2.0]				
Thyroid Gland	(50)	(50)	(50)	(50)	(49)
Infiltration Cellular, Lymphocyte	1 [3.0]				
Polyarteritis Nodosa			1 [3.0]		
C-cell, Hyperplasia	12 [2.3]	6 [1.8]	5 [1.8]	9 [2.4]	12 [2.2]
Follicle, Hyperplasia				1 [2.0]	

GENERAL BODY SYSTEM

None

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GENITAL SYSTEM

Coagulating Gland	(2)	(1)	(0)	(0)	(0)
Hyperplasia	1 [1.0]				
Inflammation, Suppurative		1 [3.0]			
Inflammation, Chronic Active	1 [2.0]				
Epididymis	(50)	(50)	(50)	(50)	(50)
Polyarteritis Nodosa			1 [3.0]	1 [1.0]	1 [3.0]
Epithelium, Degeneration	1 [2.0]				1 [2.0]
Penis	(1)	(0)	(0)	(0)	(0)
Preputial Gland	(50)	(50)	(50)	(50)	(50)
Hyperplasia	1 [1.0]				
Inflammation, Suppurative	2 [4.0]				1 [4.0]
Duct, Hyperplasia		1 [1.0]			
Prostate	(50)	(50)	(50)	(50)	(50)
Inflammation, Suppurative		1 [4.0]	1 [1.0]		1 [2.0]
Inflammation, Chronic Active	4 [1.3]	3 [1.0]	5 [1.2]	8 [1.1]	5 [1.2]
Polyarteritis Nodosa			1 [3.0]	1 [1.0]	1 [3.0]
Epithelium, Hyperplasia			5 [1.4]		3 [1.0]
Seminal Vesicle	(50)	(50)	(50)	(50)	(50)
Atrophy		1 [3.0]			
Inflammation, Chronic Active		1 [2.0]	1 [1.0]	1 [2.0]	
Polyarteritis Nodosa				1 [1.0]	
Testis	(50)	(50)	(50)	(50)	(50)
Mineral		1 [1.0]	2 [1.5]	1 [1.0]	1 [2.0]
Polyarteritis Nodosa	13 [1.5]	13 [1.7]	9 [1.3]	9 [1.7]	3 [2.0]
Germinal Epithelium, Degeneration	21 [2.1]	15 [2.2]	14 [1.9]	13 [2.0]	8 [2.0]
Germinal Epithelium, Polyarteritis Nodosa	1 [1.0]	1 [1.0]			
Interstitial Cell, Hyperplasia	3 [1.3]	1 [1.0]		2 [2.0]	3 [1.7]

HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(50)	(50)	(50)
Hemorrhage	6 [3.3]	6 [2.8]	2 [2.0]	6 [2.0]	1 [3.0]

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Hypercellularity	21 [2.0]	15 [2.1]	15 [2.3]	12 [1.8]	16 [2.3]
Hypocellularity	1 [2.0]				
Necrosis		1 [1.0]		1 [4.0]	1 [3.0]
Lymph Node	(2)	(4)	(2)	(1)	(4)
Mediastinal, Infiltration Cellular, Histiocyte			1 [3.0]		
Mediastinal, Pigment			1 [2.0]		
Pancreatic, Hemorrhage		1 [4.0]	1 [3.0]		
Pancreatic, Hyperplasia		1 [3.0]			
Pancreatic, Infiltration Cellular, Histiocyte			1 [2.0]		
Renal, Infiltration Cellular, Histiocyte		1 [2.0]			
Lymph Node, Mandibular	(50)	(50)	(49)	(50)	(50)
Atrophy	2 [2.5]			1 [3.0]	
Hyperplasia, Lymphocyte		1 [3.0]			
Hyperplasia, Plasma Cell				1 [3.0]	
Inflammation, Suppurative				1 [2.0]	
Lymphatic Sinus, Dilation		2 [2.5]			
Lymph Node, Mesenteric	(50)	(49)	(49)	(49)	(50)
Atrophy	2 [2.5]				
Hyperplasia, Lymphocyte		2 [2.5]	1 [3.0]		
Spleen	(50)	(50)	(50)	(50)	(49)
Extramedullary Hematopoiesis	39 [1.9]	38 [2.1]	41 [2.0]	43 [2.0]	43 [2.1]
Hemorrhage		1 [4.0]	1 [4.0]		2 [3.0]
Pigment	46 [1.5]	45 [1.5]	42 [1.2]	44 [1.5]	42 [1.3]
White Pulp, Atrophy	15 [2.7]	10 [2.4]	13 [2.7]	9 [2.6]	8 [2.5]
Thymus	(49)	(45)	(47)	(50)	(48)
Atrophy	44 [2.5]	43 [2.4]	45 [2.4]	47 [2.3]	43 [2.2]
Ectopic Tissue, Parathyroid Gland	2 [2.5]				
Hyperplasia, Lymphocyte	2 [4.0]				1 [1.0]
Polyarteritis Nodosa	1 [1.0]			2 [2.0]	1 [3.0]

INTEGUMENTARY SYSTEM

Mammary Gland	(45)	(50)	(50)	(50)	(49)
Hyperplasia		2 [1.5]		3 [1.0]	1 [1.0]
Skin	(50)	(50)	(50)	(50)	(50)

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Cyst Epithelial Inclusion Inflammation, Suppurative		3 1 [4.0]	1	1	1
Inflammation, Chronic Active Ulcer			1 [4.0] 1 [3.0]		
Epithelium, Hyperplasia					1 [2.0]
MUSCULOSKELETAL SYSTEM					
Bone	(50)	(50)	(50)	(50)	(50)
Fracture, Chronic	1				
Increased Bone					2
Cartilage, Vertebra, Hyperplasia	1 [2.0]				
Joint, Degeneration	1 [2.0]				
Skeletal Muscle	(3)	(0)	(3)	(1)	(4)
Degeneration	2 [2.5]		1 [1.0]		
Hemorrhage					1 [2.0]
Inflammation, Chronic Active					1 [3.0]
Mineral	1 [3.0]				
NERVOUS SYSTEM					
Brain	(50)	(50)	(50)	(50)	(50)
Gliosis	1 [1.0]	2 [3.0]		1 [3.0]	2 [1.5]
Hemorrhage	2 [2.5]	2 [2.0]	1 [3.0]		2 [3.0]
Infiltration Cellular, Histiocyte			1 [1.0]		
Necrosis	4 [3.3]	1 [4.0]	3 [3.0]	1 [3.0]	3 [2.7]
Thrombus		1			
Brain Trigeminal Ganglion	(1)	(0)	(0)	(0)	(0)
Nerve Trigeminal	(2)	(2)	(1)	(1)	(1)
Peripheral Nerve	(3)	(2)	(4)	(1)	(4)
Axon, Sciatic, Degeneration		1 [2.0]	2 [1.5]		
Axon, Tibial, Degeneration	1 [2.0]	1 [1.0]	2 [1.5]		
Ganglion, Infiltration Cellular, Histiocyte					1 [1.0]
Ganglion, Vacuolation, Cytoplasmic			1 [1.0]		1 [1.0]
Spinal, Hyperplasia	1 [2.0]				

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Trigeminal, Degeneration			1 [1.0]		
Spinal Cord	(2)	(2)	(2)	(1)	(1)
Hemorrhage		1 [3.0]			
RESPIRATORY SYSTEM					
Lung	(50)	(50)	(50)	(50)	(50)
Foreign Body	1				
Hemorrhage				1 [2.0]	
Infiltration Cellular, Histiocyte	31 [1.5]	36 [1.7]	32 [1.3]	37 [1.8]	40 [1.9]
Inflammation, Granulomatous, Focal	7 [1.4]	14 [1.0]	11 [1.0]	19 [1.0]	24 [1.0]
Inflammation, Acute	1 [1.0]	3 [1.7]	1 [1.0]		
Inflammation, Chronic Active	3 [1.7]		1 [1.0]	2 [2.5]	
Mineral	1 [3.0]	2 [1.5]			
Alveolar Epithelium, Hyperplasia	2 [1.0]	6 [1.5]	3 [1.7]	1 [2.0]	2 [2.5]
Bronchiole, Cyst	1				
Bronchiole, Fibrosis	1 [2.0]				
Nose	(50)	(50)	(50)	(50)	(50)
Foreign Body	2	2	2		1
Fungus			1		
Inflammation, Suppurative	1 [3.0]	2 [3.5]	2 [2.0]		2 [2.5]
Inflammation, Acute	6 [1.0]	6 [1.0]	4 [1.0]	5 [1.0]	3 [1.0]
Inflammation, Chronic Active			1 [1.0]		1 [2.0]
Polyarteritis Nodosa		1 [2.0]			
Epithelium, Accumulation, Hyaline Droplet	37 [1.8]	42 [2.5]	45 [2.0]	43 [2.2]	45 [2.2]
Olfactory Epithelium, Metaplasia, Respiratory	1 [1.0]	1 [1.0]	1 [1.0]		
Olfactory Epithelium, Necrosis	1 [2.0]				1 [1.0]
Respiratory Epithelium, Dilation, Glands	1 [2.0]				
Respiratory Epithelium, Hyperplasia	1 [1.0]	1 [2.0]	1 [1.0]	1 [1.0]	3 [1.0]
Respiratory Epithelium, Metaplasia, Squamous			2 [1.0]		
Respiratory Epithelium, Necrosis	2 [1.5]				
Squamous Epithelium, Metaplasia, Respiratory			1 [1.0]		
Trachea	(50)	(50)	(50)	(50)	(50)

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SPECIAL SENSES SYSTEM					
Eye	(50)	(50)	(50)	(50)	(50)
Choroid, Hyperplasia	1 [2.0]				
Cornea, Inflammation, Suppurative	1 [2.0]				
Cornea, Inflammation, Acute	4 [1.5]	1 [1.0]	3 [1.0]		
Lens, Cataract			1 [2.0]		
Retina, Degeneration		2 [2.5]	1 [1.0]	1 [1.0]	1 [1.0]
Harderian Gland	(50)	(50)	(50)	(50)	(50)
Atrophy					1 [1.0]
Hyperplasia				1 [1.0]	
Polyarteritis Nodosa		1 [3.0]			1 [3.0]
URINARY SYSTEM					
Kidney	(50)	(50)	(50)	(50)	(50)
Calculus Micro Observation Only	1				
Hemorrhage			1 [4.0]		
Infarct	2 [1.0]	4 [1.0]	4 [1.0]	2 [1.0]	1 [1.0]
Nephropathy, Chronic Progressive	49 [2.8]	50 [2.6]	49 [2.4]	48 [2.4]	48 [1.6]
Polyarteritis Nodosa				1 [3.0]	
Papilla, Necrosis		1 [1.0]			
Pelvis, Dilation	1 [1.0]			1 [3.0]	
Pelvis, Inflammation, Suppurative				1 [4.0]	
Pelvis, Inflammation, Chronic Active		1 [3.0]			
Renal Tubule, Accumulation, Hyaline Droplet	1 [2.0]	2 [1.0]	2 [2.0]		2 [3.5]
Renal Tubule, Cyst		1	1	1	1
Renal Tubule, Hyperplasia		1 [3.0]	2 [1.0]		2 [1.0]
Renal Tubule, Hyperplasia, Atypical			1 [1.0]		
Renal Tubule, Hyperplasia, Oncocytic		1 [2.0]			
Ureter	(0)	(0)	(0)	(1)	(0)
Degeneration				1 [4.0]	
Urinary Bladder	(50)	(50)	(50)	(50)	(50)
Inflammation, Chronic Active		1 [3.0]		1 [2.0]	1 [2.0]
Polyarteritis Nodosa		1 [3.0]			

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Experiment Number: 20712 - 03

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH
AVERAGE SEVERITY GRADES[b]**

Date Report Requested: 09/18/2020

Test Type: Chronic PN

Tris(Chloropropyl)phosphate

Time Report Requested: 11:04:53

Route: DOSED FEED

CAS Number: 13674-84-5

First Dose M/F: 12/12/11 / 12/13/11

Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS MALE	0 ppm males	2500 ppm males	5000 ppm males	10000 ppm males	20000 ppm males
Urothelium, Hyperplasia		1 [2.0]			
Urothelium, Infiltration Cellular, Mast Cell	1 [1.0]				

*** END OF MALE ***

a - Number of animals examined microscopically at site and number of animals with lesion

b-Average severity grade(1-minimal;2-mild;3-moderate;4-marked)

Test Type: Chronic PN

Tris(Chloropropyl)phosphate

Time Report Requested: 11:04:53

Route: DOSED FEED

CAS Number: 13674-84-5

First Dose M/F: 12/12/11 / 12/13/11

Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
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Disposition Summary

Animals Initially In Study	50	50	50	50	50
Early Deaths					
Moribund Sacrifice	15	10	8	7	6
Natural Death	13	8	8	8	11
Survivors					
Moribund Sacrifice		1			
Natural Death			1	1	
Terminal Sacrifice	22	31	33	34	33
Animals Examined Microscopically	50	50	50	50	50

ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(50)	(50)	(50)
Dilation				1 [4.0]	
Inflammation, Suppurative					1 [4.0]
Necrosis					1 [3.0]
Intestine Large, Cecum	(49)	(49)	(49)	(48)	(49)
Intestine Large, Colon	(49)	(50)	(49)	(49)	(50)
Erosion			1 [2.0]		
Inflammation, Chronic Active			1 [1.0]		
Parasite Metazoan	2	1		2	
Lymphoid Tissue, Hyperplasia				1 [3.0]	
Intestine Large, Rectum	(50)	(50)	(50)	(49)	(50)
Mineral					1 [1.0]
Parasite Metazoan	4	7	8	6	3
Intestine Small, Duodenum	(49)	(49)	(50)	(49)	(50)
Intestine Small, Ileum	(49)	(49)	(49)	(48)	(50)
Intestine Small, Jejunum	(49)	(49)	(49)	(49)	(50)
Liver	(50)	(50)	(50)	(50)	(50)
Angiectasis	1 [1.0]		2 [1.5]		
Basophilic Focus	5	7	9	8	10
Clear Cell Focus	11	14	10	9	13
Degeneration, Cystic	1 [1.0]		1 [1.0]		
Eosinophilic Focus	5	2	13	18	25

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Test Type: Chronic PN

Tris(Chloropropyl)phosphate

Time Report Requested: 11:04:53

Route: DOSED FEED

CAS Number: 13674-84-5

First Dose M/F: 12/12/11 / 12/13/11

Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
Extramedullary Hematopoiesis		1 [1.0]		1 [1.0]	
Hepatodiaphragmatic Nodule		2	1		1
Inflammation, Focal	1 [1.0]				
Mixed Cell Focus	2		1	1	7
Necrosis	6 [2.0]	2 [1.5]	3 [1.3]	5 [2.6]	3 [2.7]
Pigment				3 [1.3]	23 [1.0]
Thrombus				1	
Bile Duct, Cyst	1	6	12	19	21
Bile Duct, Dilation		1 [4.0]		1 [3.0]	
Bile Duct, Hyperplasia	7 [1.0]	21 [1.0]	24 [1.0]	29 [1.1]	11 [1.0]
Hepatocyte, Cytoplasmic Alteration	2 [1.0]			3 [1.3]	4 [1.0]
Hepatocyte, Hypertrophy	1 [2.0]	1 [1.0]		2 [1.5]	1 [2.0]
Hepatocyte, Regeneration			1 [2.0]		1 [1.0]
Oval Cell, Hyperplasia				1 [2.0]	
Mesentery	(3)	(3)	(1)	(1)	(4)
Hemorrhage	1 [4.0]				
Inflammation, Chronic Active		1 [3.0]			
Necrosis	1 [1.0]				
Fat, Necrosis			1 [2.0]		
Pancreas	(49)	(50)	(50)	(50)	(50)
Inflammation, Chronic Active			2 [1.0]		
Acinus, Atrophy	2 [2.0]	5 [1.2]	3 [1.3]	1 [1.0]	
Salivary Glands	(50)	(50)	(49)	(50)	(49)
Hyperplasia					1 [2.0]
Inflammation, Chronic Active			1 [1.0]		
Necrosis				1 [2.0]	
Stomach, Forestomach	(50)	(50)	(50)	(50)	(50)
Foreign Body				1	
Inflammation, Chronic Active	1 [1.0]	1 [2.0]	1 [2.0]	3 [1.3]	1 [2.0]
Ulcer		1 [2.0]		1 [1.0]	
Epithelium, Hyperplasia	1 [1.0]	1 [2.0]	1 [2.0]	3 [1.7]	1 [2.0]
Stomach, Glandular	(50)	(50)	(50)	(50)	(50)
Inflammation, Chronic Active					1 [1.0]
Mineral	2 [2.0]	3 [1.7]	1 [2.0]		2 [1.5]

a - Number of animals examined microscopically at site and number of animals with lesion

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Test Type: Chronic PN

Tris(Chloropropyl)phosphate

Time Report Requested: 11:04:53

Route: DOSED FEED

CAS Number: 13674-84-5

First Dose M/F: 12/12/11 / 12/13/11

Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
CARDIOVASCULAR SYSTEM					
Blood Vessel	(50)	(50)	(50)	(50)	(50)
Aneurysm			1 [4.0]		
Inflammation, Chronic Active	1 [1.0]		2 [3.0]	1 [1.0]	
Mineral	1 [1.0]				
Thrombus			1		
Heart	(50)	(50)	(50)	(50)	(50)
Cardiomyopathy	7 [1.1]	8 [1.1]	4 [1.0]	7 [1.3]	6 [1.0]
Mineral					1 [1.0]
ENDOCRINE SYSTEM					
Adrenal Cortex	(50)	(50)	(50)	(50)	(50)
Angiectasis	5 [2.0]	6 [2.5]		1 [3.0]	2 [2.0]
Degeneration, Cystic	8 [1.0]	8 [1.1]	4 [1.3]	10 [1.0]	5 [1.0]
Fibrosis	1 [2.0]				
Hemorrhage			1 [4.0]		
Hyperplasia, Focal	2 [1.0]	7 [1.1]	2 [1.5]	3 [1.3]	2 [1.0]
Hypertrophy, Focal	5 [1.2]	3 [1.3]	6 [1.3]	3 [1.0]	9 [1.2]
Inflammation, Chronic				1 [1.0]	
Necrosis	1 [1.0]		1 [3.0]		1 [4.0]
Thrombus	1	1	1		
Vacuolization Cytoplasmic	1 [1.0]				
Bilateral, Hypertrophy, Focal	3 [1.3]				
Bilateral, Necrosis	1 [4.0]				
Adrenal Medulla	(50)	(50)	(50)	(50)	(48)
Hyperplasia, Focal	9 [1.4]	11 [1.4]	8 [1.1]	6 [1.3]	1 [4.0]
Necrosis					1 [4.0]
Islets, Pancreatic	(49)	(50)	(50)	(50)	(50)
Hyperplasia	3 [1.3]	4 [1.3]	2 [1.0]	1 [2.0]	1 [1.0]
Metaplasia, Hepatocyte		1 [2.0]			1 [1.0]
Parathyroid Gland	(44)	(39)	(45)	(44)	(46)
Hyperplasia		1 [1.0]	1 [1.0]	1 [1.0]	
Pituitary Gland	(50)	(50)	(50)	(50)	(49)

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Test Type: Chronic PN

Tris(Chloropropyl)phosphate

Time Report Requested: 11:04:53

Route: DOSED FEED

CAS Number: 13674-84-5

First Dose M/F: 12/12/11 / 12/13/11

Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
Angiectasis	1 [2.0]				
Cyst			1		
Pars Distalis, Hyperplasia	17 [1.9]	15 [2.5]	18 [2.2]	16 [2.4]	20 [2.3]
Pars Distalis, Hyperplasia, Atypical				1 [3.0]	
Pars Distalis, Necrosis				2 [2.0]	
Pars Intermedia, Hyperplasia		1 [2.0]			
Rathke's Cleft, Hyperplasia			1 [2.0]		
Thyroid Gland	(50)	(50)	(50)	(50)	(49)
C-cell, Hyperplasia	9 [1.8]	11 [2.8]	11 [1.9]	3 [1.3]	10 [2.9]

GENERAL BODY SYSTEM

Peritoneum	(0)	(1)	(0)	(0)	(0)
Inflammation, Chronic Active		1 [2.0]			

GENITAL SYSTEM

Clitoral Gland	(46)	(49)	(50)	(47)	(49)
Hyperplasia, Squamous		1 [3.0]			
Inflammation, Chronic Active	1 [1.0]				
Ovary	(50)	(50)	(50)	(49)	(50)
Atrophy	32 [2.4]	38 [2.3]	32 [2.4]	40 [2.3]	28 [2.4]
Dilation				1 [3.0]	
Fibrosis	1 [3.0]				
Inflammation, Chronic		1 [2.0]			
Pigment	1 [3.0]				
Bursa, Cyst	1	1	4		
Follicle, Cyst	12	8	7	14	11
Germinal Epithelium, Cyst		2			
Germinal Epithelium, Hyperplasia					1 [1.0]
Granulosa Cell, Hyperplasia	2 [3.0]		2 [2.0]		1 [2.0]
Interstitial Cell, Hyperplasia				1 [2.0]	
Paraovarian Tissue, Cyst	3	2	3		2
Oviduct	(1)	(0)	(0)	(1)	(0)
Inflammation, Chronic Active	1 [3.0]				

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First Dose M/F: 12/12/11 / 12/13/11

Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
Uterus	(50)	(50)	(50)	(49)	(50)
Adenomyosis		1 [1.0]	2 [1.0]		
Angiectasis	1 [1.0]	1 [1.0]			
Cyst, Squamous					2
Dilation	4 [3.3]	4 [3.5]	3 [4.0]	6 [3.7]	3 [3.3]
Hemorrhage		3 [1.3]		3 [3.7]	
Hyperplasia, Atypical	5 [1.8]	10 [1.5]	6 [2.0]	13 [1.9]	8 [2.0]
Inflammation, Suppurative	5 [3.4]	5 [1.6]	7 [2.7]	11 [3.0]	7 [2.4]
Inflammation, Chronic Active			1 [4.0]	1 [2.0]	1 [1.0]
Metaplasia, Cartilagenous				1 [1.0]	
Squamous Metaplasia	23 [1.5]	32 [1.5]	26 [2.0]	26 [2.5]	24 [1.6]
Thrombus		2	1		
Ulcer		1 [3.0]		2 [1.5]	
Cervix, Cyst, Squamous					1
Cervix, Hyperplasia, Atypical	1 [2.0]				
Cervix, Hyperplasia, Squamous					1 [3.0]
Cervix, Inflammation, Suppurative					3 [2.3]
Cervix, Necrosis					1 [2.0]
Endometrium, Hyperplasia, Cystic	18 [1.8]	27 [1.9]	23 [1.8]	27 [2.0]	19 [2.2]
Lymphatic, Angiectasis			1 [3.0]		
Myometrium, Cyst	1				
Vagina	(50)	(49)	(48)	(44)	(48)
Hypertrophy, Stromal		1 [4.0]			
Inflammation, Suppurative	2 [2.0]		1 [2.0]		

HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(50)	(50)	(50)
Hemorrhage			1 [3.0]	1 [2.0]	
Hypercellularity	37 [3.2]	32 [2.8]	39 [2.8]	42 [2.9]	40 [2.6]
Hypocellularity		1 [2.0]			
Necrosis					1 [2.0]
Lymph Node	(8)	(4)	(3)	(5)	(7)
Axillary, Hyperplasia, Plasma Cell	3 [2.7]				2 [2.0]
Lumbar, Hemorrhage		1 [2.0]			

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Test Type: Chronic PN

Tris(Chloropropyl)phosphate

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Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
Lumbar, Hyperplasia, Plasma Cell	3 [2.0]	1 [3.0]		1 [3.0]	
Lumbar, Infiltration Cellular, Histiocyte	1 [2.0]				
Lumbar, Pigment	1 [3.0]				
Mediastinal, Hyperplasia, Plasma Cell			1 [2.0]		
Mediastinal, Infiltration Cellular, Histiocyte			1 [2.0]		
Lymph Node, Mandibular	(50)	(50)	(49)	(50)	(49)
Atrophy	1 [3.0]	1 [3.0]			2 [2.5]
Hyperplasia, Plasma Cell				1 [2.0]	
Lymph Node, Mesenteric	(49)	(49)	(49)	(50)	(49)
Hemorrhage				1 [2.0]	
Spleen	(49)	(50)	(50)	(50)	(50)
Extramedullary Hematopoiesis	46 [2.5]	44 [2.1]	48 [2.4]	45 [2.3]	46 [2.1]
Hemorrhage	1 [2.0]			1 [4.0]	
Infarct					1 [1.0]
Inflammation, Chronic Active			1 [3.0]		
Pigment	35 [1.3]	39 [1.6]	35 [1.4]	33 [1.5]	39 [1.5]
White Pulp, Atrophy	9 [2.4]	7 [3.0]	8 [2.3]	7 [2.9]	8 [3.0]
Thymus	(50)	(48)	(49)	(48)	(48)
Atrophy	45 [2.2]	45 [2.3]	46 [2.0]	38 [2.3]	45 [2.3]
Ectopic Thyroid					1 [2.0]
Ectopic Tissue, Parathyroid Gland				1 [2.0]	2 [1.5]
Hyperplasia, Epithelial	1 [3.0]				

INTEGUMENTARY SYSTEM

Mammary Gland	(50)	(50)	(50)	(50)	(50)
Galactocele	2 [3.0]	1 [3.0]			
Hyperplasia	14 [2.3]	10 [1.5]	12 [2.1]	9 [2.0]	15 [2.1]
Hyperplasia, Adenomatous		1 [4.0]			
Skin	(50)	(50)	(50)	(50)	(50)

MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)	(50)
Joint, Degeneration			2 [1.0]		

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Test Type: Chronic PN

Tris(Chloropropyl)phosphate

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CAS Number: 13674-84-5

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Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
Skeletal Muscle	(1)	(1)	(0)	(1)	(2)
NERVOUS SYSTEM					
Brain	(50)	(50)	(50)	(50)	(49)
Gliosis				1 [2.0]	
Hemorrhage	1 [2.0]	1 [2.0]		3 [1.7]	
Necrosis	1 [4.0]	2 [3.0]		1 [3.0]	
Cranial Nerve, Gliosis			1 [2.0]		
Peripheral Nerve	(0)	(0)	(0)	(1)	(0)
RESPIRATORY SYSTEM					
Lung	(50)	(50)	(50)	(50)	(50)
Cyst, Squamous, Multiple				1	
Cyst, Squamous	1			1	
Infiltration Cellular, Histiocyte	46 [2.0]	50 [2.4]	47 [2.2]	48 [2.7]	50 [2.7]
Inflammation, Granulomatous, Focal	7 [1.0]	3 [1.3]	6 [1.0]	6 [1.3]	5 [1.0]
Inflammation, Acute		1 [1.0]			1 [3.0]
Inflammation, Chronic Active				1 [2.0]	
Squamous Metaplasia			1 [2.0]		
Alveolus, Epithelium, Hyperplasia		2 [2.0]	1 [1.0]	1 [2.0]	1 [1.0]
Nose	(49)	(50)	(50)	(50)	(50)
Inflammation, Suppurative		1 [4.0]			
Inflammation, Acute	2 [1.0]	1 [1.0]	6 [1.0]	4 [1.3]	6 [1.0]
Inflammation, Chronic Active		1 [1.0]			
Epithelium, Accumulation, Hyaline Droplet	48 [2.8]	50 [3.1]	49 [2.8]	47 [3.0]	46 [2.9]
Glands, Hyperplasia			1 [1.0]		
Olfactory Epithelium, Metaplasia, Respiratory		1 [2.0]	1 [2.0]		
Olfactory Epithelium, Metaplasia, Squamous					1 [2.0]
Respiratory Epithelium, Metaplasia, Squamous			1 [1.0]		
Sinus, Metaplasia, Squamous		1 [3.0]			
Trachea	(50)	(50)	(50)	(50)	(50)

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Tris(Chloropropyl)phosphate

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Species/Strain: RATS/HSD

Lab: BAT

Harlan Sprague Dawley RATS FEMALE	0 ppm females	2500 ppm females	5000 ppm females	10000 ppm female	20000 ppm female
SPECIAL SENSES SYSTEM					
Eye	(50)	(50)	(49)	(50)	(49)
Atrophy		1 [2.0]			
Inflammation, Chronic Active			1 [2.0]		
Lens, Cataract		1 [1.0]			
Retina, Degeneration	3 [1.7]	1 [2.0]	2 [1.5]	2 [2.0]	1 [2.0]
Retina, Detachment		1 [4.0]			
Harderian Gland	(50)	(50)	(49)	(50)	(50)
URINARY SYSTEM					
Kidney	(50)	(50)	(50)	(50)	(50)
Developmental Malformation	1				
Ectopic Tissue, Adrenal Cortex	1				
Infarct	3 [1.0]	1 [1.0]			3 [1.3]
Inflammation, Suppurative	3 [1.7]				8 [1.4]
Inflammation, Chronic Active		1 [2.0]			
Nephropathy, Chronic Progressive	41 [1.1]	37 [1.1]	33 [1.1]	34 [1.1]	36 [1.0]
Pigment					1 [1.0]
Pelvis, Dilation		1 [1.0]	1 [4.0]		
Pelvis, Inflammation, Chronic Active		2 [2.5]	1 [2.0]		1 [2.0]
Renal Tubule, Accumulation, Hyaline Droplet	1 [2.0]			1 [1.0]	
Renal Tubule, Hyperplasia			1 [1.0]	1 [1.0]	1 [2.0]
Renal Tubule, Hyperplasia, Atypical				2 [1.0]	
Urinary Bladder	(50)	(50)	(50)	(49)	(50)
Inflammation, Suppurative		1 [3.0]			
Inflammation, Chronic Active		2 [1.5]			
Urothelium, Hyperplasia		1 [2.0]			1 [4.0]

*** END OF REPORT ***

a - Number of animals examined microscopically at site and number of animals with lesion

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